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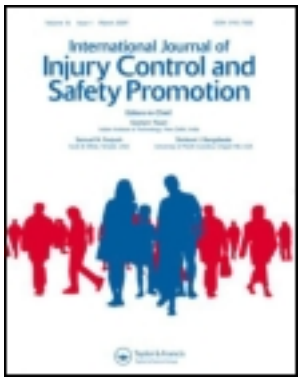

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Parents' perceptions, attitudes and behaviours towards child safety: a study in 14 European countries

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Injury is the leading cause of death for children 0–19 years of age in Europe, accounting for 3.1 deaths per 10 000 children per year. The youngest children of the ages 0–4 years require the most protection in this age group, with 2.5 injury-related deaths per 10 000 children in Europe annually. As parents are the primary caregivers of children, it is necessary to learn more about parents' perceptions, attitudes and behaviours towards child safety. This study presents the findings of a 14-country study in Europe on this theme. A quantitative survey of parents of children aged 5 years or under was performed in 14 EU member states in order to enable better targeting of prevention efforts aimed at educating parents. The total sample size was 2088. The results show that 95% of parents reported that they personally take measures to avoid accidental injury to their children. Their top concern with regard to safety of their children was children being hit by a car. The most common response, when asked why some parents find it difficult to protect their children from accidental injury, was not being able to watch their children constantly. Lack of awareness or knowledge about the causes of accidents was the second response. Two-thirds of parents would like to see more help from the government to prevent childhood injuries. Three-quarters of parents agreed that child injuries can be avoided. It was concluded that parents want to be better informed about the causes of child accidents and about actions they and society can take to reduce injury-related risks to children.

Keywords: Injury; Prevention; Attitudes; Child safety

1. Introduction

Injury is the leading cause of death for children 0–19 years of age in Europe, accounting for 3.1 deaths per 10 000 children per year (75 000 deaths in 2001). For children 0–4 years of age, who require parent protection the most, the death rate in Europe is 2.5 per 10 000 children (Valent and Tamborlini 2004). But death due to injury reflects only part of the injury burden. It is estimated that every day in the EU, not only do 14 children die due to injuries, but also 2240 are admitted to a hospital and another 28 000 receive treatment in an emergency and accident department (Vincenten 2001). For children who live in poverty the injury risk is higher (UNICEF 2001). In 2001, a total of 4793 557 disability adjusted life years (DALYs) was attributed to child injury deaths for children aged 0 to 19

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years in Europe, accounting for 200 DALYs per 10 000 children overall and 156.28 DALYs per 10 000 children for the youngest, aged 0–4 years (Valent and Tamborlini 2004).

With a health issue of this magnitude, action for child safety deserves high priority. This study presents the findings of a 14-country quantitative survey of parents of children aged 5 years or under across 14 countries in Europe to determine their perceptions, attitudes and behaviours towards child safety.

2. Methods

Fourteen EU member states agreed to participate in the survey: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Republic of Ireland, the Netherlands, Portugal, Spain, Sweden, and Great Britain. Survey questions were prepared by conducting a systematic literature review resulting in 250 abstracts that were then screened further, to 30 relevant studies of previous injury prevention parent surveys for question review. One child injury expert from each of the European Child Safety Alliance participating countries edited these questions and added to them. This created a long list of questions, which was prioritized into a short list by the same child injury experts using vote counting. The criteria for prioritizing the questions included relevance and comprehensibility, taking into account the limited interview time and budget restriction. This short list of survey questions was first piloted in a focus group of 30 parents of young children in the UK, then revised and translated into ten languages for use in 14 countries. The survey was then piloted in a focus group of 30 parents in each country with small translation corrections that followed. The final questions and statements used appear in table 1. A list of response categories was developed for the open-ended questions 1 to 4 and provided to the interviewers for coding of parent responses. Parents were then asked for their level of agreement for statements 5 to 9. Possible answer choices on a 4-point Likert scale were 'strongly agree', 'tend to agree', 'tend to disagree', 'strongly disagree'.

The survey was conducted with a total sample size of 2088 parents of children 5 years of age or younger in 14 countries in June/July 2001(table 2). This age group was selected because these children require greater assistance from parents to prevent an injury occurrence. Parents were asked to provide their age, sex, income level and highest education attainment. The sample sizes in each country were based on the proportion of people in each country who were parents of children aged 5 years or under. In 12 countries the research was carried out via Omnibus surveys. The Omnibus is a research tool that provides a cost-effective way to access a large population by adding questions to existing public opinion studies carried out periodically. In Austria an *ad hoc* study was conducted and in Denmark the survey was conducted among an existing panel of parents considered to be representative of Denmark because the agencies collecting the data in these countries did not think the necessary sample size could be made available from an Omnibus survey. The research was carried out face-to-face in nine countries. Interviewing was carried out over the telephone in those countries where no face-to-face Omnibus was available during the fieldwork period by national affiliated research agencies coordinated through a commercial research agency in the UK (table 2). Interviewers were instructed to not prompt answers, but to probe fully for responses. The data were weighted within countries according to the national population and to reflect the proportion of adults living in households with children aged 5 years or under. Descriptive statistics in the form of percentages refer to the proportion of parents mentioning safety issues. Parents were able to give more than one response to the survey questions 1 to 4.

Table 1. Questions and statements used for parent interviews in 14 countries.

Question 1	What, if anything, do you personally do to prevent accidental injury to your child/children aged 5 years or under? 'Accidental injury' means, for example, accidents such as burns, falls, cuts and bruises or product-related injuries, e.g. with toys or household goods. Please include accidental injuries in the home or outside.
Question 2	Thinking about accidents that happen to children, which, if any, health-related risks to your child/children are you most concerned about?
Question 3	From which, if any, sources have you heard or learned about ways of preventing accidental injuries of your child/children?
Question 4	What would you say are the main reasons that some parents find it difficult to always protect their children from accidental injury?
	How strongly do you agree or disagree with the following statements?
Statement 5	Most injuries involving children can be avoided.
Statement 6	More products and surroundings such as play areas should be designed with child safety in mind.
Statement 7	There should be more help from the government to help prevent childhood injuries.
Statement 8	Items that can help prevent childhood injuries, such as car seats, stair guards or bicycle helmets, should be cheaper so everyone can afford them.
Statement 9	Many child safety products have unclear or complicated instructions.

Table 2. Number of interviews and collection method per country.

Country	Number of interviews	Methodology
Austria	106	Face-to-face *ad hoc*
Belgium	114	Face-to-face Omnibus
Denmark	103	Telephone survey (using a panel of parents)
Finland	148	Telephone Omnibus
France	105	Face-to-face Omnibus
Germany	217	Face-to-face, household shoppers' Omnibus
Great Britain	320	Face-to-face Omnibus
Greece	126	Telephone Omnibus
Republic of Ireland	191	Face-to-face Omnibus
Italy	130	Face-to-face Omnibus
Netherlands	188	Telephone Omnibus
Portugal	125	Face-to-face Omnibus
Spain	107	Face-to-face Omnibus
Sweden	108	Telephone Omnibus

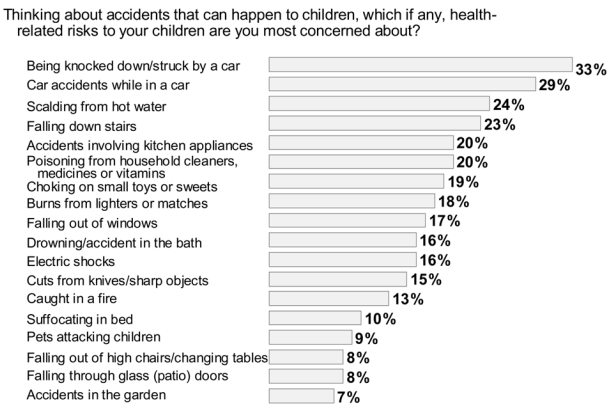

Figure 1. Parent responses from 14 European countries that are of most concern when thinking about accidents to children. Note: percentages refer to proportion of parents mentioning the item of concern. Multiple responses possible.

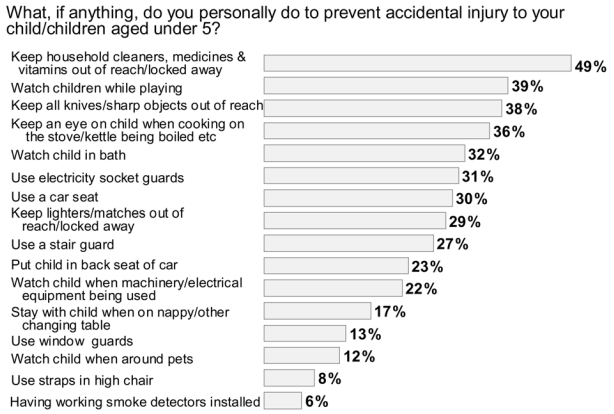

Figure 2. Most frequent spontaneous responses for preventive injury behaviours of parents from 14 European countries. Note: percentages refer to proportion of parents mentioning the item of concern. Multiple responses possible.

3. Results

3.1. *Greatest concerns of parents*

The primary concern for parents of young children across the 14 countries was the risk to their child of being hit/knocked down by a car, followed by accidents while in a car (figure 1). Parents were then likely to think of the immediate risks within their own home as their next concern.

Approximately 95% of all parents spontaneously mentioned at least one thing they do to ensure their children's safety (figure 2). The most frequently cited measure was to keep household cleaners or medicines out of reach. Analysis across the 14 EU member states showed that parents with a higher income were more likely to mention purchasing some specific safety product while those on a lower income were more likely to say they supervise their children. Men were more likely than women to say they use a stair guard and window guards, while women mentioned keeping household cleaners and medicines out of reach, or keeping an eye on the child when cooking or boiling water (data not shown).

The differences in preventive actions between countries are shown in table 3. Only four countries reported safety behaviours to prevent road injuries in the top three safety behaviour responses: Austria, Denmark, Germany, and the Republic of Ireland. Drowning prevention strategies were only mentioned by Belgium (51% of parents) and Greece (17% of parents).

Figure 3 compares parents' perceptions of the most important risks to their children with the reality of WHO statistics for leading causes of unintentional injury deaths among children aged 0 to 4 years in the EU (World Health Organization 2000). Parents' number one concern of road accidents is consistent with the reality of the leading cause of death and disability, but their level of concern is less than the size of the road toll on children. Parents expressed less concern about the risk of their children drowning, although it is the second leading cause of death for children in the EU (World Health Organization 2000). Also, parents placed a high level of concern on poison prevention compared to the low number of injury deaths that occur due to this cause.

Table 3. Most frequent preventive behaviours of parents by country.

What, if anything, do you personally do to prevent accidental injury to your child/children aged 5 years or under?			
Parent responses in 14 countries	**Keep household cleaners/medicines out of reach (49%)**	**Watch children while playing (39%)**	**Keep sharp objects out of reach (38%)**
Austria	Use a car seat (73%)	Keep household cleaners/medicines out of reach (67%)	Use electricity socket guards (64%)
Belgium	Watch children while playing (56%)	Watch child in the bath (51%)	Keep an eye on them while cooking (50%)
Denmark	Keep an eye on them while cooking (45%)	Use a car seat (38%)	Watch them when electrical equipment is being used (37%)
Finland	Watch children while playing (52%)	Keep sharp objects out of reach (39%)	Keep an eye on them while cooking (26%)
France	Watch them/keep an eye on them (52%)	Keep household cleaners/medicines out of reach (21%)	Use electricity socket guards (13%)
Germany	Keep household cleaners/medicines out of reach (81%)	Use electricity socket guards (71%)	Use a car seat (68%)
Great Britain	Keep household cleaners/medicines out of reach (43%)	Keep an eye on them while cooking (35%)	Watch children while playing (33%)
Greece	Watch children while playing (40%)	Keep sharp objects out of reach (26%)	Watch them in bath; Keep household cleaners/medicines out of reach (17%)
Ireland	Keep household cleaners/medicines out of reach (57%)	Keep an eye on them while cooking (35%)	Use a car seat (51%)
Italy	Watch children while playing (62%)	Keep sharp objects out of reach (50%)	Keep household cleaners/medicines out of reach (46%)
Netherlands	Keep household cleaners/medicines out of reach (46%)	Use a stair guard (31%)	Use electricity socket guards (27%)
Portugal	Keep household cleaners/medicines out of reach (56%)	Keep an eye on them while cooking (43%)	Keep sharp objects out of reach (40%)
Spain	Watch children while playing (42%)	Keep household cleaners/medicines out of reach (40%)	Use electricity socket guards (38%)
Sweden	Keep household cleaners/medicines out of reach (40%)	Watch children while playing (38%)	Keep sharp objects out of reach (37%)

Note: % refers to proportion of parents mentioning the item of concern. Multiple responses possible.

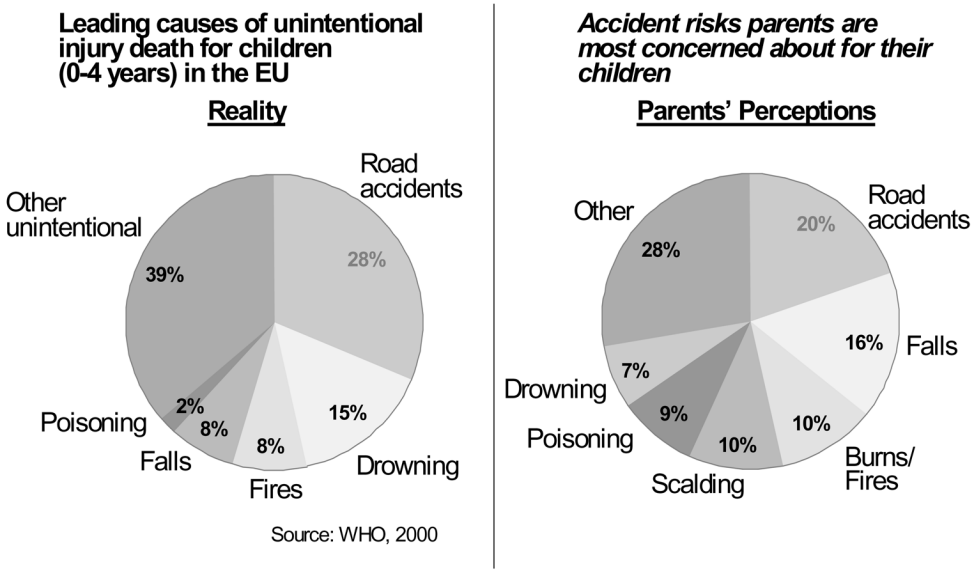

Figure 3. Perception of injury vs. reality. Note: % refers to proportion of parent responses of most concern (4856).

3.2. *Sources of information on child safety*

The most frequently cited sources of information on child safety were family and television followed by friends/other parents (figure 4). Younger parents (up to 24 years) were more likely to cite the family as a source of information and none reported using the Internet to gain information on child safety measures (data not shown). The Internet was mentioned by only 4% of parents across all countries.

3.3. *Parents' attitudes to product safety*

Regarding product safety, nine in ten parents in Europe thought that more products should be designed with child safety in mind. Women, parents on a low income and those with a lower educational level were more likely to agree that more products should be designed with child safety in mind (data not shown). Also, 59% of parents agreed that many child safety products have unclear or complicated instructions. Young parents were the least likely to cite the leaflets or instructions that come with products as a source of information about preventing accidental injury to their children. The majority of parents in all countries (83%) agreed that items that can prevent childhood injuries should be cheaper so that everyone can afford them.

3.4. *Obstacles to achieving child safety*

Parents were asked to consider why it is difficult to always protect their children. The most common response provided by 46% of parents in all countries was that it is not possible to watch them all the time. A lack of awareness or knowledge about the causes of accidents was the second most frequently given response in eight of the 14 countries (24%).

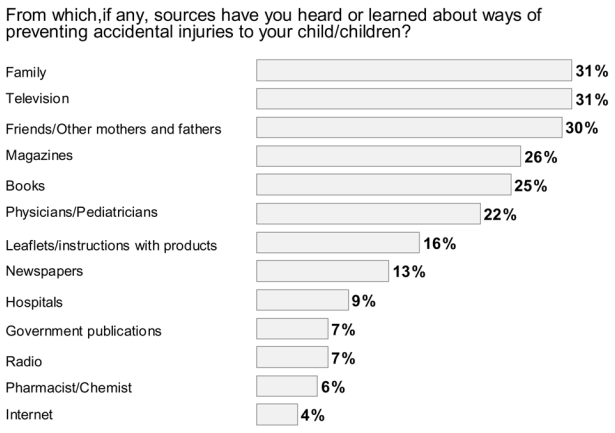

Figure 4. Sources of information regarding child injury prevention. Note: % refers to proportion of parents mentioning this item. Multiple responses possible.

Furthermore, parents on a higher income were more likely to mention obstacles such as the cost of products related to child safety, the poor design of products or unclear instructions on products. Parents on a lower income were more likely to say that children are contrary or do not listen (data not shown).

3.5. *Do parents feel that most injuries involving children can be avoided?*

Overall, three-quarters of parents (77%) agreed that most injuries involving children could be avoided. Only one in ten disagreed and a further one in ten parents was neutral.

3.6. *Do parents feel that there should be more help from the government to help prevent childhood injuries?*

Overall, two-thirds of parents across Europe agreed that there should be more help from their government to prevent childhood injuries. Parents in Portugal (83%) and Spain (81%) were the most likely to agree. In contrast, fewer than half of parents in the Netherlands (42%) and Denmark (35%) think the government should spend more money on preventing childhood injuries.

4. Discussion

Overall, three-quarters of parents agreed that most injuries involving children could be avoided. This finding differs with the results from the study by Morrongiello, who found that Canadian parents' interviewed did not indicate a strong belief that injuries to children were preventable or that parents should assume primary responsibility for preventing injuries to children (Morrongiello and Dayler 1996). Similarly, the findings of Bennet in the United States showed that no mother interviewed, spontaneously identified injury prevention as an important part of mothering and more than half of all participants believed that injuries were unpreventable (Bennet 2001). The positive responses in this survey gives an indication that European parents are interested in taking action to prevent injuries to their children, which is critical when trying to improve health behaviour by using communication campaigns (Rothschild 1979).

The most frequently cited measure of preventive action was to keep household cleaners and medicines out of reach, which although important is not the major cause of child injury deaths (World Health Organization 2000). The frequent mentioning of this safety measure could reflect the use of medicines and household cleaners, or awareness that some of the most familiar household medicines are among the most toxic. This preventive behaviour in combination with legislation for child-resistant packaging in some countries may account for the reduced deaths by

poisoning (Vincenten and Farquar 2003). In contrast, only 6% of parents installed working smoke detectors. A higher use of smoke detectors was seen in the Republic of Ireland and Sweden, which may be the result of legislation for home smoke alarms in these two countries (Eichelberger *et al.* 1990). Much of the safety behaviours described by parents focused on supervising or watching their children, even though many injuries to children happen in the parents' presence (Cummings *et al.* 2000). The most common response, when asked to consider why parents find it difficult to always protect their children, is that it is not possible to watch them all the time, followed by a lack of awareness or knowledge about the causes of accidents. This finding is consistent with previously published studies in the United States, in which most of the parents interviewed had a limited understanding of the major causes of injury (Rivara and Howard 1982, Liller *et al.* 1991, Hu *et al.* 1996). This emphasizes the need to educate parents to not only 'be watchful' but also to adopt effective safety measures.

To properly target parents with educational messages, their concerns must be understood (Solomon and DeJong 1986). This study found that the primary concern for European parents was the risk to their child of being hit/knocked down by a car, followed by accidents while in a car. This reflects the reality of child injury; transport accidents account for 28% of all child deaths in those aged 0 to 4 years by unintentional injury in the EU (World Health Organization 2000). When comparing the perception of parents with child mortality data it must be remembered that the WHO data included all 15 EU member states, whilst this research was carried out in 14 countries and there was a gap of 1 year between the two sets of data. Also, the WHO data describe unintentional deaths among children aged 0–4 years, whilst in this study parents were asked to think about accidental injuries to their children aged 0–5 years. Nevertheless, the comparison shows that the risk of drowning was not among parents' top concerns, although it is the second most common cause of unintentional child injury deaths (World Health Organization 2000).

In order to improve the safety knowledge of parents of young children, it is necessary to know from whom they can get their information. Young parents of children were the least likely to cite the leaflets or instructions that come with products as a source of information about preventing accidental injury to their children. This strongly suggests that there is scope for improving the safety instructions of products, or choosing different techniques to raise safety awareness in young parents. Health services such as family doctors and paediatricians were not frequently mentioned. This may suggest that they are under-utilized as sources of information on child safety. This is in agreement with the study results from Bennet, which showed that none of the adolescent first-time mothers interviewed reported having discussed injury prevention with their child's paediatrician (Bennet 2001).

Two-thirds of parents across Europe agreed that there should be more help from their government to prevent childhood injuries. There was strong support from all countries to have more products and environments designed with child safety in mind and that child safety products should be priced so all families can afford them. Also, more than half agreed that many child safety products have unclear or complicated instructions. These findings are in agreement with the study by Mayr, in which 80% of parents interviewed would appreciate a pre-installation of car restraints, 54% requested more informative instructions for users and 33% asked for products with better stability (Mayr *et al.* 1999). This information is useful to determine the link between parental perception of safety equipment and use (Ehrlich *et al.* 2001), as well as parental misconceptions of safety equipment, which may jeopardize the safety of their children (Ramsey *et al.* 2000).

Comparison of responses by parents with high vs. low income found that those on a low income were more likely to cite safety behaviours relating to supervision than the use of a safety product, which was the primary action of parents with high income. It appears that supervision must be coupled with adoption of other proven safety practices as the risk of child injury death has been shown to be strongly correlated with poverty (Vincenten 2004). Also, young parents on a low income were slightly more likely than those on a higher income to agree that most injuries involving children can be avoided. This differs with the finding from Girasek, who found that adults with higher economic status were more likely to believe that injuries were preventable (Girasek 2001).

4.1. *Limitations*

The difference in methodology between telephone vs. face-to-face interview may not be important due to the fact that the interview did not use any long show cards or read out lists, many of the questions were unprompted and telephone penetration is high across Europe. The present results are based on self-report data and include no actual observations. The study by Watson *et al.*, measuring the validity of self-reported safety practices from a questionnaire given to families, showed a fairly high degree of consistency between self-reported data and actual observations (Watson *et al.* 2003). Furthermore, survey questions were based on current surveys and expert opinion, but in the future a standardized and validated set of household survey questions should be utilized, such as the questionnaire by Watson *et al.* (2003).

5. Conclusions

The study undertaken provides an initial EU-wide base measure of parental perceptions, attitudes and behaviours towards child safety. This information needs to be collected on a regular basis throughout Europe to determine safety behaviour change over time and its relationship to education, engineering or enforcement prevention strategies.

Injury practitioners and researchers need to get the key prevention messages to parents so the leading causes of injuries will be addressed. As television was cited as one of the most frequent sources of information, partnerships need to be investigated between injury specialists, governments and industry to launch large-scale, media-based education campaigns. This has not been undertaken to date due to the scant resources available to public health institutions for injury prevention. Currently, injury prevention practitioners predominately rely on brochures and Internet sites as the communication forms, but these were mentioned less frequently as information sources for parents. Governments and industry should also give consideration to pricing schemes, availability and easy access of safety products to benefit families with a low income.

It can be concluded that this study shows that parents want to be and must be better informed about the causes of child accidents and what actions they can take to reduce injury risks to children. Broad education campaigns, along with government and industry adoption and enforcement of healthy public policy for products and environments for child safety would foster the development of a culture of safety for children in Europe.

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